

**Remarks regarding the rejection made in paragraph numbered 1**

Claims 1-4, 7 and 12-31 stand rejected as being anticipated by U.S. Patent No. 4,961,081 to Shiga (hereinafter Shiga). Amended independent Claims 1 and 15 are directed to a drop on demand ink jet apparatus and a drop on demand printing device for the registered placement of non-ink chemistry, respectively, that comprise at least one solenoid valve designed to emit a non-ink chemistry on a substrate. The sections of Shiga cited by in the Office Action describe an ink feeding mechanism (Figure 9) that comprises a heating element 23a for melting a solid ink and a solenoid valve 23b for delivering the melted ink chemistry to a nozzle 13 for printing the ink on a substrate (not shown). Shiga does not describe, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate. The solenoid valve described by Shiga feeds melted ink from a first reservoir 23 to and through a reservoir 21 and then to a nozzle 13 that jets a melted ink. More specifically, the solenoid valve described by Shiga does not deliver and print a non-ink chemistry on a substrate but rather feeds ink to an ink to a reservoir of an inkjet printer that prints an ink chemistry on a substrate. The ink composition described and used by Shiga is not a non-ink chemistry.

Independent Claim 19 is directed to a method of placing one or more non-ink chemistries that comprises providing a non-ink chemistry and a valve jet for discharging the non-ink chemistry in pattern, where that valve jet comprises at least on solenoid valve. Shiga does not disclose, teach or suggest a method of placing a non-ink chemistry on a substrate and does not disclose, teach or suggest a valve jet that comprises a solenoid valve for discharging a non-ink chemistry in a pattern on a substrate. The solenoid valve described by Shiga feeds melted ink to a nozzle and the nozzle prints ink on a substrate. Thus, the solenoid valve described by Shiga does not print ink, more particularly a non-ink chemistry, on a substrate.

Accordingly, Applicant submits that the rejection of Claims 1-4, 7 and 12-31 as being anticipated by Shiga is improper and should be withdrawn.

**Remarks regarding the rejection made in paragraph numbered 2**

Claims 5 and 6 stand rejected as being unpatentable over Shiga in view of Japanese Patent No. 04-366 251 to Kimura et al. (hereinafter Kimura). Amended Claims 1-14 and 15-18 are directed to a drop on demand ink jet apparatus and a drop on demand printing device for the registered placement of non-ink chemistry, respectively,

that comprise a heating element and at least one solenoid valve designed to emit a non-ink chemistry on a substrate. Shiga fails to describe, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate as discussed above. Kimura fails to disclose, teach or suggest a non-ink chemistry, a solenoid valve designed to emit a non-ink chemistry or a heating element. Kimura describes a dot printing method and apparatus that provide solenoid valve mechanisms in a manifold.

Claims 19-33 are directed to a method of placing one or more non-ink chemistries that comprises providing a non-ink chemistry, a heating element for to process the phase-change non-ink chemistry and a valve jet for discharging the non-ink chemistry in pattern, where that valve jet comprises at least on solenoid valve. Neither Shiga, Kimura nor Shiga in view of Kimura discloses, teaches or suggests a method of placing a non-ink chemistry on a substrate. Furthermore, the cited references alone or in combination do not disclose, teach or suggest an apparatus that deposits a non-ink chemistry on the substrate to provide topography on the substrate as presently recited in Claim 6.

Accordingly, Applicants respectfully request that the pending rejection of Claims 5 and 6 is improper and should be withdrawn.

### **Remarks regarding the rejection made in paragraph numbered 3**

Claims 8 and 33 stand rejected as being unpatentable over Shiga in view of U.S. Patent Application Publication No. 2003/0048341 to Mutz et al. (hereinafter Mutz). Amended Claims 1-14 and 15-18 are directed to a drop on demand ink jet apparatus and a drop on demand printing device for the registered placement of non-ink chemistry, respectively, that comprise a heating element and at least one solenoid valve designed to emit a non-ink chemistry on a substrate. Shiga fails to describe, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate as discussed above. Mutz fails to disclose, teach or suggest a non-ink chemistry, a drop on demand ink jet apparatus or a drop on demand printing device comprising a solenoid valve to emit a non-ink chemistry on a substrate. Mutz relates to acoustical ejection of fluids for combinatorial chemistry. Thus, the claims in Mutz regarding small volumes of fluids relate to a method of acoustically ejecting a small amount of fluid containing one or more reagents using focused acoustical energy and not to a drop on demand ink jet apparatus or process. Mutz does not disclose an ink jet apparatus or ink jet methods. Mutz teaches away from inkjet methods for dispensing

chemistry suggesting that inkjet technology suffers from drawbacks compared to acoustic ejection methods including clogging when used to eject an elevated temperature fluid (page 4, paragraph [0024]).

Claims 19-33 are directed to a method of placing one or more non-ink chemistries that comprises providing a non-ink chemistry, a heating element for to process the phase-change non-ink chemistry and a valve jet for discharging the non-ink chemistry in pattern, where that valve jet comprises at least on solenoid valve. Neither Shiga, Mutz nor Shiga in view of Mutz discloses, teaches or suggests a method of placing a non-ink chemistry on a substrate that includes providing heat to at least one non-ink chemistry and discharging the chemistry from a solenoid valve in a pattern. Applicants submit that Claims 1-33 are not obvious and that it would not have been obvious to produce segments discrete segments using the claimed apparatuses and methods.

Accordingly, Applicants respectfully request that the pending rejection of Claims 8 and 33 is improper and should be withdrawn.

**Remarks regarding the rejection made in paragraph numbered 4**

Claims 9 and 11 stand rejected as being unpatentable over Shiga in view of U.S. Patent no. 4,378,564 to Cross et al. (hereinafter Cross). Amended Claims 1-14 and 15-18 are directed to a drop on demand ink jet apparatus and a drop on demand printing device for the registered placement of non-ink chemistry, respectively, that comprise a heating element and at least one solenoid valve to emit a non-ink chemistry on a substrate. Shiga fails to describe, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate as discussed above. Cross fails to disclose, teach or suggest a non-ink chemistry, a solenoid valve for emitting a non-ink chemistry and a heating element.

Claims 19-33 are directed to a method of placing one or more non-ink chemistries that comprises providing a non-ink chemistry, a heating element for to process the phase-change non-ink chemistry and a valve jet for discharging the non-ink chemistry in pattern, where that valve jet comprises at least on solenoid valve. Neither Shiga, Cross nor Shiga in view of Cross discloses, teaches or suggests a method of placing a non-ink chemistry on a substrate. The dimensions that Cross describes relate to ink chemistries and methods that do not heat of the chemistry before applying the chemistry.

Accordingly, Applicants respectfully request that the pending rejection of Claim 9 and 11 is improper and should be withdrawn.

**Remarks regarding the rejection made in paragraph numbered 5**

Claim 10 stands rejected as being unpatentable over Shiga in view of U.S. Patent no. 5,270,730 to Yaegashi et al. (hereinafter Yaegashi). Amended Claims 1-14 and dependent Claim 10 are directed to a drop on demand ink jet apparatus and a drop on demand printing device for the registered placement of non-ink chemistry, respectively, that comprise a heating element and at least one solenoid valve to emit a non-ink chemistry on a substrate. Shiga fails to describe, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate as discussed above. Yaegashi also fails to disclose, teach or suggest a non-ink chemistry and a solenoid valve designed to emit a non-ink chemistry on a substrate. Yaegashi describes a bubble ink jet method and apparatus for discharging recording material, i.e. ink chemistries (col. 1, lines 10-16).

Accordingly, Applicants respectfully request that the pending rejection of Claim 10 is improper and should be withdrawn.

**Remarks regarding the rejection made in paragraph numbered 6**

Claim 32 stands rejected as being unpatentable over Shiga in view of U.S. Patent no. 4,684,964 to Ball (hereinafter Ball). Claims 19-33 including dependent Claim 32 are directed to a method of placing one or more non-ink chemistries that comprises providing a non-ink chemistry, a heating element for to process the phase-change non-ink chemistry and a valve jet for discharging the non-ink chemistry in pattern, where that valve jet comprises at least on solenoid valve. Shiga fails to disclose, teach or suggest a method of placing a non-ink chemistry on a substrate as discussed above.


Accordingly, Applicants respectfully request that the pending rejection of Claim 32 is improper and should be withdrawn.

**Conclusion**

Applicants respectfully submit that Claims 1-33 are in condition of allowance and request that the pending rejections are withdrawn and a Notice of Allowance issued. Should any questions arise with regard to this application the Examiner is encouraged to contact the undersigned at (770)-587-8620.

Please charge any prosecutorial fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

Respectfully submitted,

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**CERTIFICATE OF MAILING**

I, Christos S. Kyriakou, hereby certify that on August 4, 2003, this document is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By:   
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